CLAIMS

What is claimed is:

1. A dual mode carpet cleaning machine having a deep cleaning mode and a surface cleaning mode comprising:

a selection mechanism to select between said deep cleaning mode and said surface cleaning mode.

2. The dual mode carpet cleaning machine of claim 1, wherein the selection mechanism comprises:

a) a ball valve having a first position and a second position;

b) an actuator attached to said ball valve such that operating said actuator moves said ball valve from said first position to said second position, and from said second position to said first position; and

c) an indicator attached to said actuator, said indicator having a first setting and a second setting, such that said indicator displays said first setting when the ball valve is in said first position and displays said second setting when the ball valve is in said second position.

3. The dual mode carpet cleaning machine of claim 2, wherein the selection mechanism further comprises:

d) a solution pump outlet in fluid communication with said ball valve;

e) a deep clean jet tip in fluid communication with said ball valve such that when said ball valve is moved to said first position said deep clean jet tip is in fluid communication with said solution pump outlet; and

f) a fast dry jet tip in fluid communication with said ball valve such that when said ball valve is moved to said second position said fast dry jet tip is in fluid communication with said solution pump outlet.

4. A dual mode carpet cleaning machine comprising:

a) a main support housing;

b) an application and extraction section attached to the main support housing;

c) a storage section attached to the main support housing, and in fluid communication with the application and extraction section;

d) a removal section attached to the main support housing; and

e) a selection mechanism attached to both the main support housing and the application and extraction section.

5. A dual mode carpet cleaning machine comprising:

a) a main support housing;

b) an application and extraction section attached to the main support housing comprising:

i. a vacuum nozzle, attached to the application and extraction section;

ii. a brush assembly, attached to the application and extraction section, comprising at least one brush and working in close communication with said vacuum pump nozzle; and

iii. a motor, attached to said brush assembly, such that operation of said motor drives said brush assembly;

c) a storage section attached to the main support housing comprising:

i. a solution pump, attached to the storage section, having an inlet and an outlet; and

ii. a solution tank, attached to said solution pump, in fluid communication with said solution pump inlet;

d) a removal section attached to the main support housing comprising:

i. a vacuum pump, attached to the removal section, having an intake and an exhaust;

ii. a vacuum head in fluid communication with said vacuum pump;

iii. a removal conduit in fluid communication with said vacuum pump intake; and

iv. a waste recovery tank in fluid communication with said vacuum exhaust;

e) a set of wheels attached to the main support housing;

f) a handle attached to the main support housing; and

g) a selection mechanism attached to the main support housing comprising:

i. a ball valve, having a first position and a second position, in fluid communication with said solution pump outlet;

ii. an actuator attached to said ball valve such that operating said actuator moves said ball valve from said first position to said second position, and from said second position to said first position;

iii. an indicator attached to said actuator, said indicator having a first setting and a second setting, such that said indicator displays said first setting when the ball valve is in said first position and displays said second setting when the ball valve is in said second position;

iv. a deep clean jet tip in fluid communication with said ball valve such that when said ball valve is moved to said first position said deep clean jet tip is in fluid communication with said solution pump outlet; and

v. a fast dry jet tip in fluid communication with said ball valve such that when said ball valve is moved to said second position said fast dry jet tip is in fluid communication with said solution pump outlet.

6. The dual mode carpet cleaning machine of claim 5, wherein said fast dry jet tip delivers about 40% the amount of a fluid as said deep clean jet tip.

7. The dual mode carpet cleaning machine of claim 6, wherein said deep clean jet tip delvers about 0.52 gallons per minute of a fluid and said fast dry jet tip delivers about 0.19 gallons per minute of a fluid.

8. A cleaning solution for cleaning a carpet comprising:

a) an active detergent; and

b) an emulsifying agent;

whereby the carpet is substantially dry within two hours of applying said cleaning solution to the carpet.

9. The cleaning solution for cleaning a carpet of claim 8 comprised of from about 0.4% to 1.5% by weight of active detergent and from about 0.25% to 2.0% by weight of an emulsifying agent.

10. The cleaning solution for cleaning a carpet of claim 8, wherein a first foam produced by agitating the solution at a first concentration penetrates the carpet to the carpet backing; and

wherein a second foam produced by agitating the solution at a second concentration does not penetrate the carpet to the carpet backing.

11. The cleaning solution for cleaning a carpet of claim 8, wherein a foam produced by agitating said solution at a first concentration penetrates the carpet to the carpet backing resulting in at least an 91% cleaning efficiency; and

wherein the foam produced by agitating said solution at a second concentration does not penetrate the carpet to the carpet backing resulting in at least an 86% cleaning efficiency.

12. The cleaning solution for cleaning a carpet of claim 8 further comprising:

c) a suspending agent;

d) a non-bleach optical brightener; and

e) a sequestering agent.

13. The cleaning solution for cleaning a carpet of claim 12 further comprising:

f) a water softener; and

g) a fragrance.

14. A cleaning solution for cleaning a carpet comprising:

a) an active detergent; and

b) an emulsifying agent;

such that said carpet is substantially dry within two hours of applying the carpet cleaning solution to said carpet at a rate of about 0.19 gallons per minute.

15. A cleaning solution for cleaning a carpet comprising:

a) an active detergent;

b) an emulsifying agent;

c) a suspending agent;

d) a non-bleach optical brightener; and

e) a sequestering agent;

such that said carpet cleaning solution is applied to the carpet at a rate of about 0.19 gallons per minute; and

wherein the carpet is substantially dry within two hours.

16. A cleaning solution for cleaning a carpet comprising:

a) from about 0.4% to 1.5% by weight of an active detergent; and

b) from about 0.25% to 2.0% by weight of an emulsifying agent.

17. The cleaning solution for cleaning a carpet of claim 16 further comprising:

c) from about 0.1% to 1.0% by weight of a suspending agent;

d) from about 0.001% to 0.0025% by weight of a non-bleach optical brightener; and

e) from about 3.0% to 6.0% by weight of a sequestering agent.

18. A cleaning solution for cleaning a carpet, the carpet comprising carpet fibers and a carpet backing, comprising:

a) an active detergent;

b) an emulsifying agent;

c) a suspending agent;

d) a non-bleach optical brightener; and

e) a sequestering agent;

such that a first foam produced by agitating said cleaning solution at a first concentration penetrates the carpet to the carpet backing; and

such that a second foam produced by agitating said cleaning solution at a second concentration does not penetrate the carpet to the carpet backing.

19. The cleaning solution for cleaning a carpet of claim 18 comprising:

a) from about 0.4% to 1.5% by weight of an active detergent; and

b) from about 0.25% to 2.0% by weight of an emulsifying agent.

c) from about 0.1% to 1.0% by weight of a suspending agent;

d) from about 0.001% to 0.0025% by weight of a non-bleach optical brightener; and

e) from about 3.0% to 6.0% by weight of a sequestering agent.

20. The cleaning solution for cleaning a carpet of claim 18, wherein the second concentration is about twice the concentration as the first concentration.

21. The cleaning solution for cleaning a carpet of claim 18, wherein the first concentration is about 4.0 ounces cleaning solution per gallon of water and the second concentration is about 8.0 ounces cleaning solution per gallon of water.

22. A dual mode cleaning system for cleaning a carpet, the carpet comprising carpet fibers and a carpet backing, comprising:

a) a dual mode cleaning machine; and

b) one of a first carpet cleaning solution or a second carpet cleaning solution,

the cleaning system configured such that in a first mode a first carpet cleaning solution is used by the dual mode cleaning machine and is comprised of a first concentration of carpet cleaning composition; and

in a second mode a second carpet cleaning solution is used by the dual mode cleaning machine and is comprised of a second concentration of carpet cleaning solution, the second concentration being about twice the first concentration;

the cleaning system being further configured such that a first foam produced by agitating said first carpet cleaning solution at said first concentration penetrates the carpet to the carpet backing; and

such that a second foam produced by agitating said second carpet cleaning solution at the second concentration does not penetrate the carpet to the carpet backing.

23. The carpet cleaning system of claim 22, wherein said first concentration is about 4.0 ounces cleaning solution per gallon of water and said second concentration is about 8.0 ounces cleaning solution per gallon of water.

24. The carpet cleaning system of claim 22, wherein said first carpet cleaning solution is applied at a rate of about 0.52 gallons per minute in said first mode, and said second carpet cleaning solution is applied at a rate of about 0.19 gallons per minute in said second mode.

25. The carpet cleaning system of claim 22, wherein said carpet cleaning solution comprises:

a) an active detergent; and

b) an emulsifying agent;

whereby a carpet is substantially dry within two hours of applying said cleaning solution to the carpet.

26. A method of cleaning a carpet by applying a carpet cleaning solution to a carpet using a dual mode carpet cleaning machine such that the carpet is substantially dry within two hours of applying said carpet cleaning solution to the carpet.

27. The method of claim 26, wherein said carpet cleaning solution is applied at a concentration of about 8.0 ounces carpet cleaning solution per gallon of water.

28. The method of claim 26, wherein said carpet cleaning solution is applied to the carpet fibers at a rate of about 0.19 gallons per minute.

29. A method of cleaning a carpet, the carpet comprising carpet fibers and a carpet backing, using a dual mode carpet cleaning machine and a concentrated carpet cleaning solution comprising:

a) mixing the concentrated carpet cleaning solution at a concentration such that a foam produced by agitating the carpet cleaning solution does not penetrate to the carpet backing;

b) placing the mixed carpet cleaning solution into the dual mode carpet cleaning machine;

c) selecting a fast drying mode of the dual mode carpet cleaning machine; and

d) applying the carpet cleaning solution to the carpet fibers.

30. The method of claim 29, wherein the carpet cleaning solution is mixed at a concentration of about 8.0 ounces carpet cleaning solution per gallon of water.

31. The method of claim 29, wherein the carpet cleaning solution is applied to the carpet fibers at a rate of about 0.19 gallons per minute.

32. A dual mode carpet cleaning machine having a faster drying mode and a longer drying mode comprising:

a selection mechanism to select between said faster drying mode and said longer drying mode.

33. A method of cleaning a carpet by applying a carpet cleaning solution comprising:

a) an active detergent; and

b) an emulsifying agent;

wherein said carpet cleaning solution decreases the drying time of the carpet subsequent to cleaning the carpet.

34. The method of claim 33, wherein the carpet cleaning solution further comprises:

c) a suspending agent;

d) a non-bleach optical brightener; and

e) a sequestering agent.

35. The dual mode carpet cleaning machine of claim 3, wherein the fast dry jet tip delivers a liquid in a spray pattern with a width less than about 10.5 inches, preferably in the range of about 0.13 to 0.24 gallons per minute, more preferably 0.17 to 0.21 gallons per minute, and most preferably 0.19 gallons per minute.

36. The dual mode carpet cleaning machine of claim 3, wherein the fast dry jet tip delivers a liquid in a spray pattern with a width greater than about 10.5 inches but less than about 12.5 inches, preferably in the range of about 0.19 to 0.32 gallons per minute, more preferably 0.25 to 0.30 gallons per minute, and most preferably 0.28 gallons per minute.

37. The dual mode carpet cleaning machine of claim 3, wherein the fast dry jet tip delivers a liquid in a spray pattern with a width less than about 10.5 inches, in the range of about 24% to 44% the delivery of the deep clean jet tip.

38. The dual mode carpet cleaning machine of claim 3, wherein the fast dry jet tip delivers a liquid in a spray pattern with a width greater than about 10.5 inches but less than about 12.5 inches, in the range of about 29% to 49% the delivery of the deep clean jet tip.